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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,869	06/14/2005	Yasumasa Watanabe	4706-03	5889
23117 7590 08/01/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
RABAGO, ROBERTO				
ART UNIT		PAPER NUMBER		
1796				
MAIL DATE		DELIVERY MODE		
08/01/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/538,869

Applicant(s)

WATANABE ET AL.

Examiner

Roberto Rábago

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-7,10,13,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-7,10,13,16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Prior rejection over WO '487 is withdrawn in view of a translation of the priority document, filed 4/11/2008, which has antedated the reference.

Claim Rejections - 35 USC § 102

2. Claims 2, 3, 5-7 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaglia (EP 1013673).

The reference discloses in Example 5 the reaction of an ethylene/propylene copolymer of 138,000 molecular weight with 3:1 t-butyl hydroperoxide:dicumyl peroxide at 145°C. The reference example has not reported the Mooney viscosity; however, the example copolymer would appear to have a value within the claimed range because applicants have claimed a broad range of values which are conventional for the types of copolymers used in the reference. The reference further has not disclosed the hydroxyl group concentration of the resultant polymer, and has not specifically mentioned hydrogen abstraction; however, these features would be inherent because the recommended reference method for making the modified polymers is substantially the same as those of the claims and those described in applicants' examples 5-8. The expected result of kneading t-butyl hydroperoxide and dicumyl peroxide with EPM copolymer at 145°C would include at least a non-zero amount of hydrogen abstraction and at least a non-zero amount of hydroxyl group incorporation. The burden of proof is

shifted to applicants to show that the cited example does not include the claimed unreported properties.

Claim Rejections - 35 USC § 103

3. Claims 1-3, 5-7, 10, 13, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Medalia et al. (US 3,105,057).

The reference shows in Examples 1-4 the compounding of 100 parts ethylene-butene copolymer with 2 parts dicumyl peroxide and 100 parts carbon black on a hot mill at 177°C. The examples lack the claimed hydroperoxide component. However, the reference expressly suggests the addition of a hydroperoxide such as cumene hydroperoxide, in admixture with a peroxide such as dicumyl peroxide, at col. 2, lines 37-45. One of ordinary skill in the art would be motivated to use a hydroperoxide in methods analogous to those described in the working examples because the reference has expressly recommended them, and would furthermore be motivated to include such a hydroperoxide in an amount similar to or greater than the amount of the peroxide because the reference does not indicate that the hydroperoxide should be the minor component. The reference has not disclosed the hydroxyl group concentration of the resultant polymer, and has not specifically mentioned hydrogen abstraction; however, these features would be inherent because the recommended reference method for making the modified polymers is substantially the same as those of the claims and those described in applicants' examples 5-8. The expected result of adding cumene hydroperoxide in the exemplified methods of the reference would include at least a non-

zero amount of hydrogen abstraction and at least a non-zero amount of hydroxyl group incorporation. Regarding Mooney viscosity, the reference copolymers would appear to inherently include the claimed viscosity, or selection within the claimed range would be obvious, because applicants have claimed a broad range of values which are conventional for the type of ethylene-butene copolymer described in the reference. The burden of proof is shifted to applicants to show that the polymers made by the recommended methods, such as the preferred combination of using cumene hydroperoxide with dicumyl peroxide, would not have the claimed unreported properties.

4. Claims 1, 10, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaglia (EP 1013673).

The reference discloses in Examples 2 and 5 the reaction of an ethylene/propylene copolymer of 138,000 molecular weight with either t-butyl hydroperoxide or a 3:1 t-butyl hydroperoxide:dicumyl peroxide mixture at about 145°C. The examples state that the temperature rises to greater than 145°C, but do not state the final temperature achieved. However, selection of a temperature above the 10 hour half-life temperature of t-butyl hydroperoxide (i.e., > 167°C) would be obvious because the disclosed temperature range includes up to 250°C, and the preferred range includes up to 200°C (see [0015]). The reference example has not reported the Mooney viscosity; however, the example copolymer would appear to have a value within the claimed range because applicants have claimed a broad range of values which are conventional for the types of copolymers used in the reference examples. The

reference further has not disclosed the hydroxyl group concentration of the resultant polymer, and has not specifically mentioned hydrogen abstraction; however, these features would be inherent because the recommended reference method for making the modified polymers is substantially the same as those of the claims and those described in applicants' examples 1-8. The expected result of kneading t-butyl hydroperoxide or a t-butyl hydroperoxide/dicumyl peroxide mixture with EPM copolymer at 145-250°C would include at least a non-zero amount of hydrogen abstraction and at least a non-zero amount of hydroxyl group incorporation. The burden of proof is shifted to applicants to show that the recommended methods of the reference would not result in the claimed unreported properties.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rábago whose telephone number is (571) 272-1109. The examiner can normally be reached on Monday - Friday from 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roberto Rábago/
Primary Examiner
Art Unit 1796

RR
July 30, 2008

